CHAPTER 223
BOILERS

TABLE

223-1. Adoption of State Code. The city of Milwaukee adopts ch. Comm 41, Wis. Adm. Code, except s. Comm 41.08, as amended, as part of this code.

223-3. Scope. The regulations of this chapter shall apply to all boilers and piping components associated with boilers, fired pressure vessels, unfired pressure vessels and power piping in use at places of employment and in public buildings, except water heaters and hot water supply boilers used for domestic water supply; and to all operations involving the operation and management of all-steam boiler plants and steam engines and turbines.

223-5. Definitions. In this chapter:

1. AUTHORIZED INSPECTION AGENCY means:

a. An inspection agency as outlined in ANSI/NB23 and whose inspectors hold a valid certificate as issued by the state of Wisconsin in accordance with s. Comm 5.60, Wis. Adm. Code, as amended; or

b. An individual who holds a valid certificate as issued by the state of Wisconsin in accordance with s. Comm 5.60, Wis. Adm. Code, as amended, and who provides the department annually with proof of general liability and property damage insurance in the sum of $1,000,000 with the city of Milwaukee as an additional insured, and continuing education and training as outlined in the ANSI/ASME N-626 series code.

2. BOILER HORSEPOWER(BHP) means a gross boiler output of 33,478 Btu per hour or evaporation of 34.5 pounds of water from and at 212 degrees Fahrenheit per hour, whichever is greater. For electric boilers, one boiler horsepower shall be considered equivalent to an input of 10 kilowatts.

3. CONTROL EQUIPMENT means any electrical, mechanical, pneumatic or hydraulic devices or systems that can be used to manually or automatically control the operating conditions of a boiler, turbine or engine.

4. FIRED PRESSURE VESSEL means any vessel in which steam or other vapor is generated, but not withdrawn for external use; or pressure parts subject to direct firing from the combustion of fuels, or electricity, and which are not within the scope of American society of mechanical engineers (ASME) sections I, III or IV.

5. FIRST CLASS PLANT means any boiler plant which contains a high pressure steam boiler or boilers with a total capacity of more than 450 boiler horsepower output, as rated by boiler manufacturer rating or Wisconsin state code.

6. FOURTH CLASS PLANT means any boiler plant which contains low pressure boilers with a total capacity of more than 150 BHP, or any high pressure steam boiler or boilers with a total capacity of 110 BHP or less output, as rated by boiler manufacturer rating, or Wisconsin state code, and which does not contain any steam engines or turbines except boiler auxiliaries.

7. HIGH PRESSURE BOILER means any boiler on which the safety valve or valves are set to release at a gage pressure greater than 15 pounds per square inch.

8. LOW PRESSURE BOILER means any boiler on which the safety valve or valves are set to release at a gage pressure of 15 pounds per square inch or less.

9. LOW PRESSURE PLANT means any boiler plant which contains one or more low pressure steam boilers with a total capacity of more than 30 BHP but less than 150 BHP output, as rated by boiler manufacturer rating or Wisconsin state code.

10. MONITOR EQUIPMENT means any electrical, mechanical, pneumatic or hydraulic devices or systems which are used to provide a visual display of boiler, turbine, or engine operating conditions and which are located in an approved location. All monitored functions shall have associated audible and visual alarm systems to indicate unsafe conditions.

11. REPAIR means any work necessary to restore a boiler, pressure vessel or power piping to a safe operating condition.

12. SECOND CLASS PLANT means any boiler plant which contains a high pressure steam boiler or boilers with a total capacity of more than 110 but not greater than 450 BHP output, as rated by boiler manufacturer rating or Wisconsin state code.

13. STEAM ENGINE AND TURBINE means any engine, turbine or other prime mover which uses steam as the motive power.

14. THIRD CLASS PLANT means any boiler plant which contains a high pressure steam boiler or boilers with a total capacity of 110 BHP or less output, as rated by boiler manufacturer rating or Wisconsin state code, and which contains steam engines or turbines other than boiler auxiliaries.

15. UNFIRED PRESSURE VESSEL means a vessel in which pressure is obtained from an external source or from an indirect application of heat. Electric boilers shall be considered to be fired pressure vessels.

16. WISCONSIN PERMIT TO OPERATE means the permit issued by the Wisconsin department of commerce, as described in CH. Comm. 41, Wis. Adm. Code, as amended.

223-7. General Inspection Rules

1. PERMIT REQUIREMENTS. a. No person may install, alter, replace or repair any boiler, unfired pressure vessel, fired pressure vessel or power piping regulated in this section without first obtaining a permit and paying the fees as prescribed in s. 200-33.

b. An application for permit shall be filed with the commissioner of city development on a form furnished for this purpose for each boiler, unfired or fired pressure vessel, or power piping system. The application shall describe the installation, alteration, repair or replacement work to be done.

c. The issuance of a permit for a boiler, unfired or fired pressure vessel, or power piping system shall not preclude compliance with the provisions of this code or other laws referring to occupancy and use or construction. No other work on the boiler, unfired or fired pressure vessel, or power piping system may be done, except work authorized by the permit.

d. Any person who fails to procure a permit for the installation, alteration, replacement or repair of any boiler, unfired pressure vessel, or fired pressure vessel, or power piping shall be subject to penalties and fees as provided in ss. 200-19-1 and 200-32-3 and b.

e. The commissioner may issue a citation with or without prior order for any violation of this chapter as provided in s. 200-19-2.

2. INSPECTION REQUIREMENTS.

a. Notification. a-1. Upon the completion of any installation, alteration, replacement or repair of a boiler, or unfired pressure vessel or fired pressure vessel, the person making such installation, alteration, replacement or repair shall notify the commissioner requesting an inspection of such work as soon thereafter as practicable.

a-2. The installing contractor shall notify the commissioner requesting an inspection of the power piping, prior to the construction, installation, alteration, repair or replacement of any power piping system, so that inspections may be arranged. The commissioner shall be given a minimum of 2 business days' notice prior to the requested date of inspection.

b. Inspection. b-1. Every boiler, unfired pressure vessel or fired pressure vessel may be inspected by the commissioner to determine whether it complies with the requirements of this section before it is placed in service.

b-2. No Wisconsin permit to operate shall be issued by the commissioner until the installation substantially complies with the requirements of this section.

c. Hydrostatic test. c-1. A hydrostatic test may be witnessed by the commissioner of every cast iron boiler which has a heat input of more than 200,000 Btu per hour before being placed in service.

c-2. Factory assembled boilers may be waived from this requirement by the commissioner.

c-3. A test pressure of 1.5 times the maximum pressure (minimum of 45 pounds per square inch) shall be applied to the boiler in the presence of the commissioner.

d. Power Piping Systems Not Covered by the ASME code section 1. All power piping systems not covered by ASME code section 1, and requiring construction in accordance with the ASME code for power piping, may be inspected by the commissioner. If the power piping system is not inspected by the

commissioner, it shall be inspected by an organization having a documented quality control program as described in par. f.

e. Power Piping Installation; Inspections. Except as provided in par. g, no owner shall install, alter or replace any power piping without obtaining inspections in accordance with par. d as follows:

e-1. After the material is delivered to the job site, but prior to the start of construction of the power piping system.

e-2. Prior to the insulating of the power piping system.

e-3. Prior to the power piping system being placed into service.

f. Documented Quality Control Program. A documented quality control program shall:

f-1. Be reviewed and approved annually by the commissioner.

f-2. Contain the scope of work the organization intends to perform.

f-3. Contain a description of the repairs of a routine nature to be performed without prior on site approval by the authorized inspection agency.

f-4. Contain a written description of the authority and responsibility of those persons in charge of the quality control system.

f-5. Contain an organization chart showing the relationship between management and engineering, purchasing, assembling, inspection and quality control.

f-6. Contain procedures, which will assure that the drawings, design calculations, specifications, fabrication, examination, testing and inspections are done in accordance with all applicable codes.

f-7. Contain a material control system, which will insure that the material received is properly identified to satisfy code requirements.

f-8. Contain the method to control welding to insure that welding conforms to section IX of the ASME code.

f-9. Contain a system for correction of nonconformities. A nonconformity is any condition which does not comply with the applicable rule of this code.

f-10. Contain provisions for identifying nondestructive examination procedures for power piping.

f-11. Contain documented inspections, as described in par. e, made by an authorized inspection agency on forms approved by the commissioner.

f-12. Contain sample forms and any detailed procedures for their use.

g. Exemption. An organization having a documented quality control program as described in par. f shall be exempt from the requirements in subs. 1 and 2-a-2.

h. Routine Repairs. Repairs of a routine nature, as specified in the organization's quality control program and which have been approved by the authorized inspection agency, may be performed without a site inspection.

3. INSTALLATION STANDARDS. a. Other Standards. In any case not covered by reference in s. 223-1, the commissioner may use the ASME codes for boilers, pressure vessels and power piping systems, as amended, as representing standard engineering and safe practice.

b. Special Rules. The commissioner may promulgate such rules for the enforcement of the regulations of this section as are deemed proper and desirable, and which are not inconsistent with this chapter and state statutes.

c. Change Orders. The commissioner may order such changes to any boiler, pressure vessel or power piping installation as may be necessary for the proper protection of life and property.

4. PERIODIC INSPECTIONS AND INSPECTION FEES. a. Inspection. The commissioner may inspect boilers, unfired pressure vessels and fired pressure vessels in a manner that is consistent with the provisions of ch. Comm. 41, Wis. Adm. Code, as amended.

b. Testing Authority. b-1. The owner or user of a boiler, unfired pressure vessel or fired pressure vessel to be tested by the commissioner shall, after receiving notice, prepare the boiler, unfired pressure vessel or fired pressure vessel for an internal inspection, external inspection, hydrostatic pressure tests or non-destructive examination.

b-2. Failure to comply with such notice within the time specified may result in reinspection fees established in s. 200-33-23-i.

c. Inspection Fees. Each inspection, test, of service performed by the commissioner shall be paid for at rates established in s. 200-33.

d. Authorized Inspection Agency and Reports. In lieu of inspections by the commissioner, the commissioner may accept inspections made by an authorized inspection agency. Such inspections shall be made in accordance with this section. For boilers,

unfired pressure vessels and fired pressure vessels subject to periodic inspection requirements, the authorized inspection agency shall have a detailed report of each inspection filed with the commissioner within 15 days from the date of inspection. The reports shall be printed on an approved form and provide all information requested on the form, including code violations.

e. Failure to Report Inspections. If an authorized inspection agency fails to meet the requirements listed in par. d, the commissioner may make the inspections. Inspections done by the commissioner due to a lack of response by the authorized inspection agency shall be billed to the owner or user in accordance with s. 200- 33.

f. Responsibility. The owner or user of the boiler, unfired pressure vessel or fired pressure vessel shall be responsible for obtaining a periodic inspection and maintaining a valid Wisconsin permit to operate, pursuant to s. 223-1.

g. Service of Order. Any order issued under this section shall be served upon the owner of record pursuant to s. 200-12-2-b. The order may also be posted on the premises. The department may place a charge for the posting in the amount provided in s. 200-33-43.5 and may place a code enforcement fee as provided in s. 200-33-8.8 against the subject property which may be assessed and collected as a special charge.

5. MAINTENANCE: UNSAFE OR HAZARDOUS EQUIPMENT, AND COMPLAINTS.

a. The owner or users of any boiler, unfired pressure vessel, fired pressure vessel or power piping system shall maintain such equipment in a safe operating condition.

b. Complaints on improper or defective boilers, unfired pressure vessels or fired pressure vessels may be investigated and action may be taken as herein regulated.

c. If, upon inspection, any boiler, unfired pressure vessel or fired pressure vessel is found to be unsafe or in a hazardous condition, the commissioner may order such equipment removed from service until such unsafe or hazardous condition is corrected. A written order to remedy conditions may be sent by the commissioner to the person owning or using such equipment. Failure to comply with the order within the time specified shall result in penalties or fees as established in ss. 200-19 and 200-33.

223-9. Stationary Engineer's Permit to Operate.

1. SCOPE. Except as provided in sub. 2, this section shall apply to all boiler plants and steam engines and turbine.

a. No person may operate, manage or take charge of any boiler, steam engine or steam turbine regulated by this chapter without first procuring a stationary engineer's permit to operate.

b. No person owning or controlling any boiler, steam engine or steam turbine may authorize or permit any person who does not have a proper and valid permit to operate, have control of, manage or take charge of such boiler, steam engine or steam turbine or any part thereof.

c. Boilers which use liquids other than water shall be subject to the same permit requirements determined by the boiler horsepower rating and safety valve setting of the boilers, except that a person having only a low pressure boiler operator permit shall not be permitted to operate such boilers.

2. EXCEPTIONS. The permit regulations of this section shall not apply to:

a. Boiler plants consisting of one or more low pressure boilers with a total capacity of less than 30 boiler horsepower or 1,000,000 Btu output as rated by boiler manufacturer rating plate or Wisconsin state code.

b. Boiler plants consisting only of one or more miniature boilers which are used as separate units.

c. Steam engines or turbines which are supplied with steam from a miniature steam boiler.

d. Locomotives used in interstate commerce.

e. Low pressure boiler heating plants in one and 2-family dwellings. .

f. Any boiler completely filled with water or other liquid, to be used externally to itself at pressure not greater than 160 pounds per square inch, or at a temperature not greater than 250 degrees Fahrenheit.

3. PERMIT TO OPERATE CLASSIFICATION. Five classes of stationary engineers' permits to operate are established:

a. First class stationary engineer's permit.

b. Second class stationary engineer's permit.

c. Third class stationary engineer's permit.

d. Fourth class stationary engineer's permit.

e. Low pressure boiler operator's permit.

4. APPLICATION AND EXPERIENCE.

a. Application for a permit to operate under this chapter may be made by any person holding a National Institute for the Uniform Licensing of Power Engineers (NIULPE) license or an American Society of Power Engineers (ASOPE) license.

b. The commissioner shall determine the applicant's fitness for a particular class of permit. The city's permit classifications shall correspond to the following NIULPE or ASOPE classifications:

Milwaukee	NIULPE	ASOPE
Low Pressure Boiler Operators Permit	5th Class License	Facility Operating Engineer 3rd Class License
Fourth Class Stationary Engineers Permit	4th Class License	Facility Operating Engineer 2nd Class License
Third Class Stationary Engineers Permit	3rd Class License	Power Plant Operating Engineer 3rd Class License
Second Class Stationary Engineers Permit	2nd Class License	Power Plant Operating Engineer 2nd Class License
First Class Stationary Engineers Permit	1st Class License	Power Plant Operating Engineer 1st Class License

c. A verified application for a permit to perform work as an engineer in the city shall be made on forms furnished by the commissioner.

d. The applicant shall list education and work experience relating to the operation of boiler plants. Applications for stationary engineer's permit to operate should contain the name of the engineer in charge of the plant where the applicant worked, whenever possible.

e. An applicant for a low pressure boiler operator's permit to operate must demonstrate good mechanical aptitude, present evidence of successful completion of an approved stationary engineer's course and the NIULPE or ASOPE student engineer's exam or other equivalent NIULPE or ASOPE licence.

5. GRANTING OF PERMITS TO OPERATE AND FEES.

a. Upon approval by the commissioner the department shall issue a permit to operate to the successful applicant within 7 days after certification.

b. For fees see s. 200-33.

6. SUSPENSION AND REVOCATION OF PERMIT TO OPERATE. a. Causes. The commissioner may suspend or revoke the permit of any stationary engineer for any of the following violations:

a-1. The making of any material false statement on any application for a permit.

a-2. Permitting the water in the boiler to go too low.

a-3. Permitting a higher pressure other than that fixed by the commissioner.

a-4. Unnecessary absence from post of duty.

a-5. Failure to report in writing to the commissioner any defect in or accident to any boiler, steam engine or turbine under the permittee's care.

a-6. Failure to keep a daily log in the boiler, steam engine or turbine room.

a-7. A showing that the permittee has violated any provision of this chapter.

b. Commencement of Proceedings. The commissioner may institute suspension or revocation proceedings. However, the permittee shall be given the opportunity to be heard in his or her own defense prior to any permit suspension or revocation.

7. APPEALS AND BOARD OF ARBITRATION. Any person who wishes to appeal a decision of the commissioner concerning the granting, suspension or revocation of a permit shall file a notice of appeal with the standards and appeals commission as provided for in s. 200-17.

8. GENERAL OPERATION REGULATIONS. a. Notification of Absence by Employer. In any case where a permit to operate holder in charge of a plant is temporarily unable to report to duty because of sickness, personal injury or for any other reason or cause, the employer of the permit to operate holder shall immediately obtain the services of a substitute permit holder. The employer shall notify the commissioner within 24 hours that a substitute permit holder has taken charge of the plant.

b. Temporary Operation. If the employer is unable to obtain the services of a permit holder having the class of permit required for the plant, he or she may apply to the commissioner for a permit to allow one of the following persons to take charge of the plant for the following specified periods of time:

b-1. A stationary engineer having a lower class of permit than that required for the plant for a period not exceeding 60 days.

b-2. Any person who does not have the required boiler operation experience, but can pass a written examination given by the commissioner on the operation of boilers and steam engines and turbines for a period not exceeding 30 days.

c. Notice of Accidents by Engineer. Every stationary engineer who is in charge of a boiler, steam engine or turbine shall notify the commissioner in writing of any accident in which such equipment is involved within 24 hours after the accident occurs and report any serious defects or hazards in such equipment which might be contributory to a serious accident.

d. Notice of Change in Employment. Every person permitted in this section shall notify the commissioner when his or her place of employment as a stationary engineer changes within 3 days from the date of change.

e. Permit to be Displayed. Every person permitted under this section shall display his or her permit to operate under glass or other transparent material in a conspicuous place in the boiler, engine or turbine room.

f. Unlawful to Exceed Boiler Pressures. It shall be unlawful to carry a higher pressure in any boiler other than as set by the commissioner in accordance with ch. Comm 41, Wis. Adm. Code, as amended, and the condition of the boiler as found upon inspection.

g. Daily Log. Every stationary engineer permitted under this section shall keep a daily log in the boiler room to include the time and the day of checks being made on the boiler, engine or turbine.

9. FIRST CLASS PLANTS: OPERATION REQUIREMENTS. a. Personal Supervision. a-1. Each first class plant, when in operation, shall have a first class stationary engineer responsible for the safe operation of the plant. Such first class stationary engineer shall personally supervise the operation of the plant and shall be available at all times to make any decisions which may affect the safe operation of the plant.

a-2. Where a first class plant which contains steam engines or turbines other than boiler auxiliaries is operated on a shift basis, a second class stationary engineer may act as an assistant and operate the plant on any shift.

a-3. Where a first class plant which does not have any steam engines or turbines except boiler auxiliaries is operated on a shift basis, a fourth class stationary engineer may act as an assistant and operate the plant on any shift.

a-4. Boilers, engines or turbines shall be operated by the stationary engineer in charge, or by an assistant with the proper operating permit, who shall be stationed in a position to manually control and visually monitor the control equipment except where permitted in s. 223-11.

b. Automatic Controls; Personal Supervision.

b-1. Where boilers, engines or turbines are equipped with control devices as set forth in subds. 2 or 3, the stationary engineer in charge or an assistant with the proper operating permit, shall be assigned to oversee the boilers, engines or turbines in operation.

b-2. Control devices for boilers shall include the following functions:

b-2-a. Monitor pressure and control firing rate.

b-2-b. Monitor and control water level.

b-2-c. Shut down boiler with dual shutoff valves.

b-2-d. Where required, monitor and control low water cutoff with manual reset.

b-2-e. Visual monitoring of equipment. (Note: Alarms are recommended for low water, high pressure and flame failure.)

b-3. Control equipment for turbines and engines must control overspeed.

b-4. Control equipment must be tested in accordance with ASME CSD-1 at least once per year, and certification of tests shall be required. Control devices and safety equipment shall be checked daily and logged, in addition to the yearly certification check.

c. Separated Boilers, Engines and Turbines. Where the boiler room and the engine or turbine are separate and where the boilers, engines or turbines are not equipped with control devices and monitoring equipment, a second class stationary engineer shall be stationed at the engines or turbines and a fourth class stationary engineer shall be stationed at the boiler at all times while the boilers, engines or turbines are in operation.

10. SECOND CLASS PLANTS: OPERATION REQUIREMENTS. a. Personal Supervision a-1. Each second class plant, when in operation, shall have a second class stationary engineer responsible for the safe operation of the plant. Such second class stationary engineer shall personally supervise the operation of the plant and shall be available at all times to make any decisions which may affect the safe operation of the plant.

a-2. Where a second class plant which contains steam engines or turbines other than boiler auxiliaries is operated on a shift basis, a third class stationary engineer may act as an assistant and operate the plant on any shift.

a-3. Where a second class plant which does not have any steam engines or turbines, except boiler auxiliaries, is operated on a shift basis, a fourth class stationary engineer may act as assistant and operate the plant on any shift.

a-4. Boilers, engines or turbines shall be operated by the stationary engineer in charge, or by an assistant with the proper operating permit who shall be stationed in a position to manually control and visually monitor the control equipment except where permitted in s. 223-11.

b. Automatic Controls; Personal Supervision.

b-1. Where boilers, engines or turbines are equipped with control devices, as set forth in subds. 2 or 3, the stationary engineer in charge or an assistant with the proper grade of permit shall be assigned to oversee the boilers, engines or turbines in operation.

b-2. Control devices for boilers shall include the following functions:

b-2-a. Monitor pressure and control firing rate.

b-2-b. Monitor and control water level.

b-2-c. Shut down boiler with dual shutoff valves.

b-2-d. Where required, monitor and control low water cutoff with manual reset.

b-2-e. Visual monitoring of equipment. (Note: Alarms are recommended for low water, high pressure and flame failure.)

b-3. Control equipment for turbines and engines shall control overspeed.

b-4. Control equipment shall be tested in accordance with ASME CSD-1 at least once per year and certification of tests shall be required. Control devices and safety equipment shall be checked daily and logged, in addition to the yearly certification check.

c. Separated Boilers, Engines and Turbines. Where the boiler room and the engine or turbine room are separate and where the boilers, engines or turbines are not equipped with control devices and monitoring equipment, a third class stationary engineer shall be stationed at the engines or turbines, and a fourth class stationary engineer shall be stationed at the boiler at all times while the boilers, engines or turbines are in operation.

11. THIRD CLASS PLANTS: OPERATIONS REQUIREMENTS. a. Personal Supervision. a-1. Each third class plant, when in operation, shall have a third class stationary engineer responsible for the safe operation of the plant. The third class stationary engineer shall personally supervise the operation of the plant and shall be available at all times to make any decisions which may affect the safe operation of the plant.

a-2. Where a third class plant which does not have any steam engines or turbines except boiler auxiliaries is operated on a shift basis, a fourth class stationary engineer may act as assistant and operate the plant on any shift.

a-3. Boilers, engines or turbines shall be operated by the stationary engineer in charge, or an assistant with the proper operating permit, who shall be stationed in a position to manually control and visually monitor the control equipment except where permitted in s. 223-11.

b. Automatic Controls; Personal Supervision.

b-1. Where boilers, engines or turbines are equipped with control devices, as set forth in subds. 2 or 3, the stationary engineer in charge or an assistant with the proper operating permit shall be assigned to oversee the boilers, engines or turbines in operation.

b-2. Control devices for boilers shall include the following functions:

b-2-a. Monitor pressure and control firing rate.

b-2-b. Monitor and control water level.

b-2-c. Shut down boiler with dual shutoff valves.

b-2-d. Where required, monitor and control low water cutoff with manual reset.

b-2-e. Visual monitoring of equipment. (Note: Alarms are recommended for low water, high pressure and flame failure.)

b-3. Control equipment for turbines and engines must control overspeed.

b-4. Control equipment must be tested in accordance with ASME CSD-1 at least once per year and certification of tests shall be required. Control devices and safety equipment shall be checked daily and logged, in addition to the yearly certification check.

c. Separated Boilers, Engines and Turbines. Where the boiler room and the engine or turbine room are separate and where the boilers, engines or turbines are not equipped with control devices and monitoring equipment, a third class stationary engineer shall be stationed at the engines or turbines and a fourth class stationary engineer shall be stationed at the boiler at all times while the boilers, engines or turbines are in operation.

12. FOURTH CLASS PLANTS: OPERATION REQUIREMENTS. a. Personal Supervision. a-1. Each fourth class plant, when in operation, shall have a fourth class stationary engineer responsible for the safe operation of the plant. The fourth class stationary engineer shall personally supervise the operation of the plant and shall be available at all times to make any decisions which may affect the safe operation of the plant.

a-2. Boilers shall be operated by a fourth class stationary engineer who shall be stationed in a position to manually control and visually monitor the control equipment except where permitted in s. 223-11.

b. Automatic Controls; Personal Supervision.

b-1. Where boilers are equipped with control devices as set forth in subd. 2, a fourth class stationary engineer shall be assigned to oversee the boilers while in operation.

b-2. Control equipment for boilers shall include the following functions:

b-2-a. Monitor pressure and control firing rate.

b-2-b. Monitor and control water level.

b-2-c. Shut down boiler with dual shutoff valves.

b-2-d. Where required, monitor and control low water cutoff with manual reset.

b-2-e. Visual monitoring of equipment. (Note: Alarms are recommended for low water, high pressure and flame failure.)

b-3. Control equipment must be tested in accordance with ASME CSD-1 at least once per year and certification of tests shall be required. Control devices and safety equipment shall be checked daily and logged, in addition to the yearly certification check.

c. Separated Boilers. Where boiler rooms are separate and where the boilers are not equipped with control devices and monitoring equipment, a fourth class stationary engineer shall be stationed at each boiler at all times while the boilers are in operation.

13. LOW PRESSURE PLANTS: OPERATING REQUIREMENTS. a. Personal Supervision. a-1. Each low pressure plant, when in operation, shall have a low pressure boiler operator for the safe operation of the low pressure plant. The low pressure boiler operator shall personally supervise the operation of the plant and shall be available at all times to make any decisions which may affect the safe operation of the plant.

a-2. Each low pressure plant, when in operation, shall have a low pressure boiler operator who shall visit the boiler at least twice each day except where permitted in s. 223-11.

b. Number of Plants Supervised. If permitted by the commissioner, a low pressure boiler operator may take charge of not more than 5 low pressure plants.

c. Daily Log. A daily log shall be maintained in the boiler room and be readily available for inspection. The permitted engineer shall check the boiler for safe operation and enter on the log the time and date on which the boiler was checked**.**

223-11. Electronically Monitored Boiler Plants.

1. PERMIT. a. Permit Required. No person may install, alter, repair or replace an electronically monitored boiler system without first obtaining a permit to do so.

b. Permit Application. Applications shall be obtained from and filed with the department of city development. The application shall require the following information:

b-1. Floor plans of the building indicating the location of the electronic monitoring station, the type and location of all boiler controls and valves, the location of the engineer on duty when the boiler is operating, and a written explanation or diagram of how the signal and notification system works.

b-2. A description of the installation, alteration, repair or replacement work to be done.

b-3. An outline of a preventive maintenance program which follows the ASME guidelines for care of boiler plants.

b-4. Any other information which the department of city development deems necessary to insure safe operation of the boiler.

c. Issuance of Permit. Upon approval of the application by the commissioner of city development, a permit shall be issued for only that work stated on the application.

2. GENERAL OPERATION REGULATIONS. a. Electronically monitored boilers shall be considered to be in operation when they are controlled by a thermostat, pressure control, water temperature control, timing device or other control device.

b. In all cases the stationary engineer or assistant with the proper operating permit shall properly maintain and control the equipment.

c. Whenever the engineer is not stationed in a position to manually control or visually monitor the control equipment, the name of the engineer who is on duty and information on how the engineer may be contacted shall be clearly displayed in the boiler room.

d. The commissioner may shut down all boilers, turbines or engines which are not maintained by an engineer with the proper grade of operating permit.

e. Monitoring may be performed by personnel without a stationary engineer permit from a location approved by the commissioner, provided all responses to the equipment are performed by personnel with the proper operating permit.

f. Failure of the monitoring or control equipment shall revert control of the plant immediately to the person responsible for safe operation of the plant or an assistant with the proper operating permit.

g. The commissioner may require additional equipment, alterations or procedures, as may be deemed necessary, to insure the safe operation of the plant.

h. No equipment may be installed on any electronically monitored boiler plants which would disconnect or override the safety controls.

3. REMOTE MONITORING 1st CLASS, 2nd CLASS, 3rd CLASS AND 4th CLASS PLANTS. Where the stationary engineer responsible for the safe operation of the plant or an assistant with the proper operating permit is not stationed in a position to visually monitor the control equipment at all times while the boilers, engines or turbines are in operation, remote monitoring may be permitted, if the following requirements are met:

a. The plant shall be continuously monitored while in operation.

b. Monitoring equipment for boilers shall include the following functions:

b-1. Low water cut-off alarm with manual reset.

b-2. High pressure alarm with manual reset.

b-3. Flame failure alarm with manual reset.

b-4. Loss of power to monitoring system.

b-5. Dual gas shutoff valves for boiler.

c. Monitoring equipment for turbines or engines shall include the following functions:

c-1. Overspeed trip and alarm.

c-2. Loss of power to monitoring system.

d. Monitoring equipment for an electronically controlled boiler used for laundry and dry cleaning purposes with a maximum of 20 plant boiler horsepower output as rated by the boiler manufacturer rating or Wisconsin administrative code, shall include the following functions:

d-1. Low water cut-off alarm with manual reset.

d-2. High pressure alarm with manual reset.

e. Remote monitoring of a 1st class, 2nd class, 3rd class or 4th class plant shall have an approved preventative maintenance program in accordance with guidelines set in ASME section VII.

4. REMOTE MONITORING; LOW PRESSURE PLANTS. Remote monitoring of low pressure plants may be permitted if the following requirements are met:

a. If an engineer is not manually controlling the plant, it shall be continuously monitored while in operation.

b. Monitoring equipment for the boilers shall include the following functions:

b-1. Low water cut-off alarm with manual reset.

b-2. High pressure alarm with manual reset.

b-3. Flame failure alarm.

b-4. Loss of power to monitoring system.

c. The commissioner shall be furnished with a list of the names of stationary engineers employed by the owner or monitoring service and assigned to boiler surveillance and shall be notified within 3 days whenever names are added or removed from such list.

d. The commissioner shall be notified by monitoring services when a boiler will be monitored at a central station and when a boiler which has been monitored is no longer under contract for such services. Such notification shall be made within 30 days prior to terminating the service.

e. Remote monitoring of a low pressure plant shall have an approved preventative maintenance program in accordance with guidelines set in ASME section VI.

5. TESTING. After the plant has been equipped for electronic monitoring, the system shall be tested and put into safe operating condition. A certificate stating that the plant, its controls and the monitoring system are operating properly shall be furnished to the commissioner. The certificate shall be signed and sealed by an engineer registered by the state of Wisconsin, who shall act as an agent for the owner of the system.

6. INSPECTIONS. Each electronically monitored plant, its controls and monitoring system, shall be inspected annually by an installer to insure that it is operating properly. A certificate stating that the plant is operating properly shall be signed and sealed by an engineer registered by the state of Wisconsin, who shall act as an agent for the owner of the system. The certificate shall be furnished to the department prior to putting the system into permanent operation and annually thereafter. The inspections shall also be noted in the daily log.

LEGISLATIVE HISTORY
CHAPTER 223

Abbreviations:
am = amended ra = renumbered and amended rn = renumbered
cr = created rc = repealed and recreated rp = repealed

Section	Action	File	Passed	Effective
ch. 223	cr	File #85-1396	12/10/85	1/1/86
ch. 223	rc	921199	11/20/92	12/11/92
ch. 223	rc	981189	12/18/98	1/1/99
ch. 223	rc	000795	10/10/2000	10/27/2000
223-01	cr	891008	10/10/89	10/28/89
223-02	rn from 223-01	891008	10/10/89	10/28/89
223-1-17	cr	961640	3/4/97	3/20/97
223-2-2-a-1	am	871340	10/27/87	1/1/88
223-2-5-a	rp	871008	10/10/89	10/28/89
223-2-5-b	am	871008	10/10/89	10/28/89
223-3-4-d	am	961523	2/11/97	2/29/97
223-3-4-f	am	961640	3/4/97	3/20/97
223-3-4-g	cr	961640	3/4/97	3/20/97
223-3-4-g	am	980352	7/7/98	7/24/98
223-3-5-d	am	File #96-1698	2/3/87	2/20/87
223-3-5-d	am	871340	10/27/87	1/1/88
223-3-8-a	am	900676	9/25/90	10/12/90
223-3-14-a	am	File #86-366	6/17/86	7/9/86
223-5-1-a	am	010687	9/25/2001	10/12/2001
223-5-1-b	am	010687	9/25/2001	10/12/2001
223-7-1-b	am	980963	12/18/98	1/1/99
223-9-4-a	am	030688	9/23/2003	10/10/2003
223-9-4-b	rc	030688	9/23/2003	10/10/2003
223-9-4-e	am	030688	9/23/2003	10/10/2003
223-11-1-b	am	980963	12/18/98	1/1/99
223-11-1-b-4	am	980963	12/18/98	1/1/99
223-11-1-c	am	980963	12/18/98	1/1/99

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